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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,601	11/26/2001	Hideto Fujita	107314-00029	6606

4372 7590 08/19/2003

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EXAMINER
BARTH, VINCENT P

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,601	FUJITA ET AL.	
	Examiner	Art Unit	
	Vincent P. Barth	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 26-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *1-8 and 26-37* is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The listing of references in the Specification is not a proper information disclosure statement, as Applicants have set forth such references on pages 2 and 3 in the Specification of the instant Application. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP§609 A(1) states that the list may not be incorporated into the specification but must be submitted in a separate paper. Applicants must provide copies of such references prior to, or concurrent with, the reply to the instant Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz, U.S. Pat. No. 5,198,877 (30 Mar. 1993), in view of Chan, et al., U.S. Pat. No. 5,376,796 (27 Dec. 1994).

4. Referring to Claims 1-6, Schulz discloses a three-dimensional optical shape determining system, in which a measuring head 12 has a plurality of pilot light emitters (20, 22 and 24) which provide a means for a plurality of pilot light sensors (26, 28 and 30) to determine the location of the measuring head 12 in two coordinate systems (see Fig. 1). The first coordinate system corresponds to the position of the measuring head 12 with respect to the pilot light sensors, and the second reference coordinate system (identified as the "world coordinate system" in the instant Application) is a reference coordinate system 80 (see Fig. 1). Schulz further discloses a coordinate computer 24 which calculates the 3D spatial coordinates in relation to the coordinate reference frame 80 (col. 6, lns. 9-14). Schulz does not explicitly disclose a guide rail system, indeed, the preferred embodiment therein is a hand-held device. However, the system is certainly not limited to a hand-held system, and those of skill in the art would expect that the measuring head 12 could be mounted on a gantry, a boom, a stand, a guide rail, or any other convenient holding and/or moving device in the event that such would be useful. In fact, one of the objectives of Schulz is to eliminate the need for, "[an] expensive, complicated, and high precision mechanical positioning apparatus" (col. 4, lns. 32-38). Therefore, Schulz suggests that such positioning elements could be used, but that eliminating them saves costs and simplifies the device. Nevertheless, Chan discloses a body contouring system in which a camera or other sensing device may be rotated by a motorized means (i.e. a "driving" means, as is set forth in Claim 31) about a patient by means of a circular gantry 205 (see Figs. 2 and 3; col. 7, ln. 58 et seq.; col. 15, lns. 64-66), which keeps the camera at a relatively constant distance from the patient, if desired. Schulz and Chan are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. See Medtronic, Inc. v. Cardiac

Pacemakers, 721 F.2d 1563, 1572-1573, 220 USPQ 97, 103-104 (Fed. Cir., 1983). The motivation for combining the references would have been to provide a means to position the measuring head by a mechanical means, as is suggested in Schulz. Accordingly, it would have been obvious to those skilled in the art to combine the references, at the time of the invention, in order to obtain such benefit.

5. Referring to Claims 7 and 8, in which the object under observation is a foot, and in which the foot is examined in a particular order is a non-limiting statement of intended use, which does not distinguish the invention over the prior art. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP §2114, citing In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). Applicants have not set forth any differences in the device which would add new limitations thereto.

6. Claims 26-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz, U.S. Pat. No. 5,198,877 (30 Mar. 1993), in view of Chan, et al., U.S. Pat. No. 5,376,796 (27 Dec. 1994), further in view of Hirota, et al., U.S. Pat. No. 6,064,749 (16 May 2000) and Barsal, et al., U.S. Pat. No. 3,994,563 (30 Nov. 1976).

7. Referring to Claims 26-31, Schulz discloses a three-dimensional optical shape determining system, in which a measuring head 12 has a plurality of pilot light emitters (20, 22 and 24) which provide a means for a plurality of pilot light sensors (26, 28 and 30) to determine the location of the measuring head 12 in two coordinate systems (see Fig. 1). The first

coordinate system corresponds to the position of the measuring head 12 with respect to the pilot light sensors, and the second reference coordinate system (identified as the "world coordinate system" in the instant Application) is a reference coordinate system 80 (see Fig. 1). Schulz further discloses a coordinate computer 24 which calculates the 3D spatial coordinates in relation to the coordinate reference frame 80 (col. 6, lns. 9-14). Schulz does not explicitly disclose a guide rail system, indeed, the preferred embodiment therein is a hand-held device. However, the system is certainly not limited to a hand-held system, and those of skill in the art would expect that the measuring head 12 could be mounted on a gantry, a boom, a stand, a guide rail, or any other convenient holding and/or moving device in the event that such would be useful. In fact, one of the objectives of Schulz is to eliminate the need for, "[an] expensive, complicated, and high precision mechanical positioning apparatus" (col. 4, lns. 32-38). Therefore, Schulz suggests that such positioning elements could be used, but that eliminating them saves costs and simplifies the device. Nevertheless, Chan discloses a body contouring system in which a camera or other sensing device may be rotated by a motorized means (i.e. a "driving" means, as is set forth in Claim 3) about a patient by means of a circular gantry 205 (see Figs. 2 and 3; col. 7, ln. 58 et seq.; col. 15, lns. 64-66), which keeps the camera at a relatively constant distance from the patient, if desired. Schulz and Chan are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. See Medtronic, Inc. v. Cardiac Pacemakers, 721 F.2d 1563, 1572-1573, 220 USPQ 97, 103-104 (Fed. Cir., 1983). The motivation for combining the references would have been to provide a means to position the measuring head by a mechanical means, as is suggested in Schulz. Accordingly, it would have been obvious to those skilled in the art to combine the references, at the time of the invention, in

order to obtain such benefit. Schulz does not explicitly disclose that the position of the measuring head 12 can be located with respect to the reference coordinate system by a set of stereo cameras. However, such methods of locating a measuring device by means of a stereo camera arrangement has been known, and is often referred to as determining the "pose" of a remote camera (see Hirota at col. 4, ln. 34). Hirota discloses a stereoscopic means of determining a camera position or pose with respect to the surrounding landscape reference frame (see schematic Fig. 1, elements 22 and 24; col. 5, lns. 60-61; Fig. 4; col. 13, et seq.). Schulz, Chan and Hirota are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. In the case of Hirota, the surfaces are characterized as landmarks. Barsal discloses a stereographic system for evaluating stereophotographs, from which the contour of a scene may be reproduced (col. 1, lns. 17-18; col. 2, lns. 3-8). Barsal discloses that the stereophotographs from which the contours of a scene may be reproduced may also be evaluated by means of a system of mirrors 4 and 4' (col. 3, lns. 35-36), and which create virtual images therefrom (col. 4, ln. 5). Schulz, Chan, Hirota and Barsal are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. As discussed above, Schulz provides a computer 24 which calculates the 3D spatial coordinates in relation to the coordinate reference frame 80 (col. 6, lns. 9-14), thus said computer would also be capable of calculating the data from the virtual images formed from the mirrors, as well as generating the appropriate equations for such use.

8. Referring to Claims 32-34, providing cases, covers, housings, *et cetera*, for optical devices has been well known in the art. Accordingly, the limitations claimed would have been obvious to those skilled in the art at the time of the invention. See MPEP§2144.03.

9. Referring to Claims 35 and 36, Schulz discloses a three-dimensional optical shape determining system, in which a measuring head 12 has a plurality of pilot light emitters (20, 22 and 24) which provide a means for a plurality of pilot light sensors (26, 28 and 30) to determine the location of the measuring head 12 in two coordinate systems (see Fig. 1). The first coordinate system corresponds to the position of the measuring head 12 with respect to the pilot light sensors, and the second reference coordinate system (identified as the "world coordinate system" in the instant Application) is a reference coordinate system 80 (see Fig. 1). Schulz further discloses a coordinate computer 24 which calculates the 3D spatial coordinates in relation to the coordinate reference frame 80 (col. 6, lns. 9-14). Schulz does not explicitly disclose a guide rail system, indeed, the preferred embodiment therein is a hand-held device. However, the system is certainly not limited to a hand-held system, and those of skill in the art would expect that the measuring head 12 could be mounted on a gantry, a boom, a stand, a guide rail, or any other convenient holding and/or moving device in the event that such would be useful. In fact, one of the objectives of Schulz is to eliminate the need for, "[an] expensive, complicated, and high precision mechanical positioning apparatus" (col. 4, lns. 32-38).. Therefore, Schulz suggests that such positioning elements could be used, but that eliminating them saves costs and simplifies the device. Nevertheless, Chan discloses a body contouring system in which a camera or other sensing device may be rotated by a motorized means (i.e. a "driving" means, as is set forth in Claim 3) about a patient by means of a circular gantry 205 (see Figs. 2 and 3; col. 7, ln. 58 et seq.; col. 15, lns. 64-66), which keeps the camera at a relatively constant distance from the patient, if desired. Schulz and Chan are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. See Medtronic, Inc. v. Cardiac

Pacemakers, 721 F.2d 1563, 1572-1573, 220 USPQ 97, 103-104 (Fed. Cir., 1983). The motivation for combining the references would have been to provide a means to position the measuring head by a mechanical means, as is suggested in Schulz. Accordingly, it would have been obvious to those skilled in the art to combine the references, at the time of the invention, in order to obtain such benefit. Schulz does not explicitly disclose that the position of the measuring head 12 can be located with respect to the reference coordinate system by a set of stereo cameras. However, such methods of locating a measuring device by means of a stereo camera arrangement has been known, and is often referred to as determining the "pose" of a remote camera (see Hirota at col. 4, ln. 34). Hirota discloses a stereoscopic means of determining a camera position or pose with respect to the surrounding landscape reference frame (see schematic Fig. 1, elements 22 and 24; col. 5, lns. 60-61; Fig. 4; col. 13, et seq.). Schulz, Chan and Hirota are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. In the case of Hirota, the surfaces are characterized as landmarks. Barsal discloses a stereographic system for evaluating stereophotographs, from which the contour of a scene may be reproduced (col. 1, lns. 17-18; col. 2, lns. 3-8). Barsal discloses that the stereophotographs from which the contours of a scene may be reproduced may also be evaluated by means of a system of mirrors 4 and 4' (col. 3, lns. 35-36), and which create virtual images therefrom (col. 4, ln. 5). Schulz, Chan, Hirota and Barsal are analogous art, since they are from a similar problem solving area, in that each involves determining surface contours. As discussed above, Schulz provides a computer 24 which calculates the 3D spatial coordinates in relation to the coordinate reference frame 80 (col. 6, lns. 9-14), thus said computer would also

be capable of calculating the data from the virtual images formed from the mirrors, as well as generating the appropriate equations for such use.

10. Referring to Claim 37, Applicant has not disclosed that disposing the measuring head perpendicular to the mirror which creates the virtual image provides an advantage, is used for a particular purpose, solves a stated problem, or functions differently from the prior art. Accordingly, it would have been obvious design choice to those skilled in the art at the time of the invention to modify the combination of Schulz, Chan, Hirota and Barsal to obtain the invention as claimed. In the alternative, disposing the measuring head perpendicular to the mirror is an optimization of workable ranges by routine experimentation. See In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP§2144.05(II).

Comments

11. Applicants have filed another U.S. application Serial No. 09/964,644, which has been published as U.S. Pre-Grant Patent Publication No. 2002/0039134 (4 Apr. 2002), and which appears to be closely related to the instant Application. However, Applicants have not disclosed said publication an Information Disclosure Statement, nor have Applicants identified said application as a related application in the instant Specification. The Examiner requests that Applicants provide the reasons for such omissions, as well as whether or not Applicants consider said application to be related to the instant Application.

12. Claim 26 contains a minor typographical error in which the description of the second means should be spelled "real image" (pg. 2 of Prelim. Amend. dated 7 Jan. 2002).

CONCLUSION

13. Applicants' Claims 1-8 and 26-37 are rejected based on the reasons set forth above.

14. Any inquiries concerning this communication from the Examiner should be directed to Vincent P. Barth, whose telephone number is 703-605-0750, and who may be ordinarily reached from 9:00 a.m. to 5:30 p.m., Monday through Friday. The fax number for the group before final actions is 703-872-9318.

15. If attempts to reach the Examiner prove unsuccessful, the Examiner's supervisor is Frank G. Font, who may be reached at 703-308-4881.

16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.